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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: Richard D. Zaun, et al.

Examiner: James W. Keenan

Serial No.: 10/698,147 Group Art Unit 3652

Filed: 31 October 2003 (Atty. Ref. No. 15903D-US)

For: APPARATUS FOR TRANSPORTING AND FILLING FREIGHT CONTAINERS

Moline, IL 61265

22 November 2005

APPLICANT'S APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Real Party in Interest

The real party in interest is Deere & Company, a Delaware Corporation having its principle place of business in Moline, IL. Deere & Company became the real party in interest by an assignment executed by the inventors on various dates in the month of January 2002 and recorded with the Patent Office on 22 February 2002, Reel 012650, Frame 0794.

Related Appeals and Interferences

The applicant is unaware of any related appeals and/or interferences.

Status of Claims

Claims 1-6 are currently pending in the above-identified application. The claims, stand finally rejected by the Examiner under 35 USC 103(a). A correct copy of the claims is found in the attached Appendix A.

Status of Amendments

An amendment dated 16 September 2005 and filed after the Final Rejection has not been entered. In an Advisory Action (Paper No. 20050928) dated 3 October 2005 the Examiner denied entry of the amendment asserting that the amendment raises new issues that would require further consideration and/or search and that the amendment is not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal. Specifically, the Examiner asserts that the amendments in claim 1 proposing to change "lower" to --bottom-- and "removable ... container" to --container removable from the chassis-- are new issues in that no claim language equivalent in scope thereto has been previously presented. A copy of the un-entered amendment to the claims is found in the attached Appendix B.

Summary of the Invention

Cross Reference to Related Applications

The present application is a Division of Application serial No. 09/969,203, filed 1 October 2001.

Summary

The present invention relates to an apparatus for transporting and filling freight containers, such as intermodal containers, and in particular for transporting the container through a field to a harvesting machine and filling containers with agricultural produce, such as grain, beans, seed, etc., as the harvesting machine moves through the field. (Specification ¶ [0001]). Specifically, the present invention relates to an apparatus for transporting and filling a freight container, such as an ISO standard intermodal container, with grain or other crop at the point of harvest. The apparatus includes a chassis adapted to support the freight container and a hopper for receiving grain from a harvesting machine. A conveyor moves the grain from the hopper and into the container. The conveyor is inclined and operated at a speed sufficient to throw grain along an arcuate path into and through the container to the opposite end. The path allows the grain to reach the opposite end of the container

with little, or no, grain striking the top of the container. The apparatus is pulled by a tractor or can be a self propelled vehicle to move the container through a field to the harvester to receive grain and fill the container while the harvester continues to move through the field harvesting grain. (Abstract of the Invention).

Issues

The issues are:

1. Are claims 1-3 anticipated under 35 USC 102(b) by US Patent No. 5,100,277 to Musil?

2. Are claims 2 and 4-6 obvious under 35 USC 103(a) in view of US Patent No. 5,100,277 to Musil?

Grouping of claims

Claims 1, 3 and 4-6 should stand or fall together.

Claim 2 is thought to be patentable individually.

Argument

Rejection

The Examiner has finally rejected claims 1 and 3 under 35 USC 102(b) as being anticipated by US Patent No. 5,100,277 to Musil. The Examiner has also rejected claims 2 and 4-6 under 35 USC 103(a) as being unpatentable over US Patent No. 5,100,277 to Musil.

ISSUE 1: Are claims 1-3 anticipated under 35 USC 102(b) by US Patent No. 5,100,277 to Musil?

The present invention provides an apparatus for transporting and filling a freight container, such as an ISO standard intermodal container, at the point of harvest. The apparatus includes a chassis with either wheels or endless tracks. The

chassis is adapted to support the freight container and also supports a hopper for receiving the crop from a harvesting machine, such as a combine. A conveyor moves the grain from the hopper and into the container. The container is filled through either an opening at the nose end of the container or through the container rear doors with a bulkhead installed inside the container. The bulkhead is open at the top, allowing the container to be filled over the bulkhead. The apparatus is pulled by a tractor or can be a self-propelled vehicle. (Specification ¶ [0006]).

The apparatus includes lift arms to load and unload containers onto the chassis, thus giving the apparatus the capability of handling a container in addition to transporting the container. The lift arms can be used to move the container onto a semi-trailer or to set the containers on the ground. (Specification ¶ [0007]).

The conveyor is a belt conveyor that is inclined at an angle and operated at a speed necessary to throw the grain into the container at one end and reach the opposite end of the container. The grain travels along an arcuate trajectory through the container without striking the top of the container. This allows the container to be substantially filled without extending the conveyor into the container. By not extending the conveyor into the container, there is no need to coordinate withdrawal of the conveyor as the container is filled. In a preferred embodiment the conveyor is inclined at approximately a 15° angle and the belt is operated at about 2200 feet per minute. At these operating parameters, it is possible to fill a 20-foot intermodal container in less than five minutes. Depending upon the grain and moisture, the container will reach its weight limit before it is filled by volume. The weight limit may not be the container weight limit but the weight limit for road transport of a filled container. The road weight limit depends on several factors, including the number and spacing of axles supporting the container. (Specification ¶ [0009]).

It is respectfully submitted that Musil does not anticipate claims 1 and 3. Specifically, with respect to claim 1, Musil does not disclose a hopper having an open upper end and a lower (bottom) outlet, as contemplated by the present

invention. As shown in the drawings of Musil, particularly Fig. 4, the outlet of Musil is on a side of the hopper 46 (rear of the hopper 46 relative to arrow 13 in Fig. 1) thus necessitating the hopper pivoting mechanism described at column 6, lines 29-65. Further, Musil does not disclose a chassis supporting a removable freight container. Musil discloses a paving machine 10 having a feed hopper 18. The Examiner admits that there is nothing in the disclosure of Musil to indicate that the hopper 18 is removable but asserts that it is a removable freight container as broadly claimed. This assertion is not understood. If the disclosure of Musil does not indicate that the container is removable how can the hopper of Musil be considered a removable freight container. In any event, the hopper of Musil certainly is not a freight container as contemplated by the claims of the present application. With respect to claim 3, Musil specifically teaches away from operating at a speed and angle to throw material following an arcuate path. As discussed at column 10, lines 27-56 the nature of paving asphalt is such that gravitational separation of aggregate is undesirable, so Musil utilizes shields 113 and 114 to ensure that gravitational separation is limited. Musil desires to merely drop material from the end of the slat conveyor downward into the feed hopper 18. Throwing the material at an angle and speed along an arcuate path would only contribute further to gravitational separation of aggregate. See also column 13 lines 44-52 and column 16 lines 2-6. The Examiner asserts that the conveyor of Musil is operable at a speed and angle to cause the material to follow an arcuate path, yet there is nothing in the Musil disclosure to suggest as much, and such is contrary to the teachings of Musil as discussed above.

ISSUE 2: Are claims 2 and 4-6 obvious under 35 USC 103(a) in view of US Patent No. 5,100,277 to Musil?

It is respectfully submitted that claims 2 and 4-6 are not obvious in view of Musil for the reasons discussed above with respect to claims 1 and 3 and further for the reasons set forth below. Specifically, with respect to claim 2, because Musil does not disclose a chassis supporting a removable freight container, there is no

suggestion in Musil that a fifth wheel hitch would be desirable or that such could even be used with the disclosed device. Further, with respect to claims 4-6, Musil teaches away from employing the conveyor at an angle and speed to throw material along an arcuate path to fill a container as discussed above. Because Musil teaches against the gravitational separation of aggregate, there is no suggestion in Musil to find an optimum angle and speed to attain an arcuate flow of material required to fill a freight container from one end as contemplated by the present invention.

Conclusion

The cited reference does not disclose or suggest a hopper having an open upper end and a lower (bottom)outlet, nor does the reference disclose or suggest a removable freight container as contemplated by the present invention. The reference does not disclose or suggest the combination of speed and angle of inclination for the purpose of creating an arcuate or parabolic crop path whereby the container can be substantially filled.

It is therefore submitted that claims 1-6 are not anticipated or made obvious in view of the cited reference.

Reversal of the rejection is respectfully requested.

Any fees or charges due under 37 CFR 1.17(f) or otherwise due as a result of filing of the present paper may be charged against Deposit Account 04-0525. Two duplicates of this page are enclosed.

Respectfully,

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Appendix A

(Claims as they currently stand)

1. (Currently Amended) Apparatus for transporting and filling freight containers, each of the containers having an opening therein, the apparatus comprising:

a chassis supported by ground engaging transport elements;

a hopper having an open upper end and a lower outlet;

a conveyor having proximal and distal ends, the conveyor disposed beneath the hopper outlet for receiving material from the hopper, the conveyor moving material away from the hopper outlet to the distal end;

a container chassis supporting a removable freight container, the freight container having an opening so as to receive material that is to be loaded by the conveyor into the container; and

the chassis including a hitch to couple the chassis to the container chassis.

2. The apparatus as defined by claim 1 wherein the hitch is a fifth wheel hitch.

3. The apparatus as defined by claim 1 wherein the conveyor is operable at a speed to throw the material through the opening and into an interior of the container, the material following an arcuate path as a function of the conveyor angle and speed so as to reach an opposite end of the container whereby the container can be substantially filled.

4. The apparatus as defined by claim 3 wherein the conveyor has a belt operating at a speed between 1700 and 2300 feet per minute.

5. The apparatus as defined by claim 3 wherein the conveyor is inclined at about a 15 degree angle.

6. The apparatus as defined by claim 5 wherein the conveyor has a belt operating at a speed of about 2200 feet per minute.

Appendix B

(Amendment submitted on 16 September 2005 (not entered))

1. (Currently Amended) Apparatus for transporting and filling freight containers, each of the containers having an opening therein, the apparatus comprising:

a chassis supported by ground engaging transport elements;

a hopper having an open upper end and a ~~lower~~ bottom outlet;

a conveyor having proximal and distal ends, the conveyor disposed beneath the hopper outlet for receiving material from the hopper, the conveyor moving material away from the hopper outlet to the distal end;

a container chassis supporting a ~~removable~~ freight container removable from the chassis, the freight container having an opening so as to receive material that is to be loaded by the conveyor into the container wherein the conveyor is operable at a speed to throw the material through the opening and into an interior of the container, the material following an arcuate path as a function of the conveyor angle and speed so as to reach an opposite end of the container whereby the container can be substantially filled; and

the chassis including a hitch to couple the chassis to the container chassis.

2. (Previously Amended) The apparatus as defined by claim 1 wherein the hitch is a fifth wheel hitch.

3. (Cancelled)

4. (Currently Amended) The apparatus as defined by claim ~~3~~ 1 wherein the conveyor has a belt operating at a speed between 1700 and 2300 feet per minute.

5. (Currently Amended) The apparatus as defined by claim ~~3~~ 1 wherein the

conveyor is inclined at about a 15 degree angle.

6. (Previously Amended) The apparatus as defined by claim 5 wherein the conveyor has a belt operating at a speed of about 2200 feet per minute.